

6. At the ends of the covered area and at overlapping joints, space staples no more than 18 in (450 mm) apart.
7. Ensure that staples remain flush with the ground.

C. Rolling

After placing and stapling the jute mesh:

1. Firmly embed it in the soil by tamping or rolling.
2. Secure mesh that bridges over soil surface irregularities with extra staples to provide overall contact with the soil.

714.3.06 Quality Acceptance

General Provisions 101 through 150.

714.3.07 Contractor Warranty and Maintenance

Maintain jute mesh installation during the life of the Contract. Before acceptance of the Project, reshape, regrass, or refertilize if:

- Staples become loose or raised
- Mesh becomes loose, torn, or undermined

Repair or replace jute mesh without additional compensation.

714.4 Measurement

Jute mesh, complete in place and accepted, will be measured for payment by the square yard (meter), surface measure. Laps will not be measured but will be included in the overall area.

714.4.01 Limits

General Provisions 101 through 150.

714.5 Payment

Preparing areas to be meshed, including seeding or sodding, will be paid for under the appropriate Contract Items.

Jute mesh will be paid for at the Contract Unit price per square yard (meter), which is full compensation for constructing the Item and providing materials, equipment, tools, labor, maintenance, and incidentals.

Payment will be made under:

Item No. 714	Jute mesh	Per square yard (meter)
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714.5.01 Adjustments

General Provisions 101 through 150.

Section 715—Bituminous Treated Roving

715.1 General Description

This work includes furnishing and placing a layer of bituminous treated roving on planted slopes, ditches, waterways, and other areas according to the Plans or as directed by the Engineer.

715.1.01 Definitions

General Provisions 101 through 150.

715.1.02 Related References

A. Standard Specifications

Section 822—Emulsified Asphalt

B. Referenced Documents

QPL 24

715.1.03 Submittals

Furnish the Department a certification from the manufacturer stating that glass fibers or fibrillated polypropylene yarn meets the requirements of this Specification.

715.2 Materials

Wind glass fibers or fibrillated polypropylene yarn into cylindrical packages so that the roving can be continuously fed through an ejector driven by compressed air and expanded into a mat.

Lightly bind fibers or yarn together in a ribbon form without using clay, starch, or other damaging substances.

For a list of sources, see QPL 24.

Ensure that the material does not contain the following:

- More than 0.75 percent of saponifiable acids
- Petroleum solvents
- Other agents known to be toxic to plant life

A. Glass Fiber Material

Ensure the glass fiber package weighs no less than 30 lbs (14 kg).

B. Polypropylene Yarn Material

Ensure the polypropylene yarn package meets these requirements:

- Weighs no less than 18 lbs (8 kg).
- The nominal size of the roving is 515 yd/lb (1038 m/kg).
- Contain enough UV inhibitors to retain 70 percent of its strength after 500 hours of exposure in an Atlas Twin Arc Weatherometer.

C. Bituminous Material

Use asphalt emulsion grade SS-1 or SS-1h according to Section 822 for tying down fiber or yarn material.

715.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

715.3 Construction Requirements**715.3.01 Personnel**

General Provisions 101 through 150.

715.3.02 Equipment

When applying glass fiber or polypropylene yarn, use an air compressor capable of supplying 40 ft³ (1.1 m³) of air per minute at 80 psi to 100 psi (550 kPa to 690 kPa) pressure. Run 3 kits simultaneously from a 125 ft³ (3.5 m³) compressor. Each kit will consist of:

- One air gun specifically designed for spraying glass fibers or polypropylene yarn
- Enough 3/8 in (10 mm) rubber hose for application
- At least one bucket container

Do not use equipment that cuts or breaks the roving. Apply asphalt using equipment that sprays the material uniformly at the rates specified in Subsection 715.3.05.

715.3.03 Preparation

General Provisions 101 through 150.

715.3.04 Fabrication

General Provisions 101 through 150.

715.3.05 Construction

A. Bituminous Treated Fibers

Apply bituminous treated roving within 24 hours after planting an area with permanent grass. Apply roving and bituminous material uniformly over the planted areas at the following rates:

1. On Slopes

Spread glass fiber on slopes at the approximate rate of 0.2 to 0.25 lbs/yd² (110 g to 135 g/m²). Apply bituminous material at the approximate rate of 0.12 gal to 0.15 gal/yd² (0.5 L to 0.7 L/m²).

2. In Waterways

In waterways, ditches, flumes, and channels, spread glass fiber at the approximate rate of 0.4 lbs to 0.5 lbs/yd² (215 g to 270 g/m²). Apply bituminous material at the approximate rate of 0.24 to 0.30 gal/yd² (1 L to 1.5 L/m²).

Areas covered with bituminous treated roving do not require an application of mulch.

B. Bituminous Treated Polypropylene Yarn

1. On Slopes

Spread polypropylene yarn on slopes at the approximate rate of 0.10 lbs to 0.15 lbs/yd² (55 g to 80 g/m²). Apply bituminous material at the approximate rate of 0.12 gal to 0.15 gal/yd² (0.5 L to 0.7 L/m²).

2. In Waterways

In waterways, ditches, flumes and channels, spread polypropylene yarn at the approximate rate of 0.2 to 0.25 lbs/yd² (110 g to 135 g/m²). Apply bituminous material at the approximate rate of 0.24 to 0.30 gal/yd² (1 L to 1.5 L/m²).

After the emulsified asphalt breaks and becomes tacky, lightly apply sand or pulverized soil to treated areas to prevent the treated area from sticking to anything that touches it. Do not apply sand or soil quantities that will damage newly planted areas if directed by the Engineer.

C. Material Substitution

When bituminous treated roving is specified, the Contractor has the option to substitute any of the following materials for bituminous treated roving:

- Section 710—Permanent Soil Reinforcing Mat
- Section 712—Fiberglass Blankets
- Section 713—Excelsior Blankets
- Section 714—Jute Mesh

All of the materials, construction, and measurement portions of Section 710, Section 712, Section 713, or Section 714, whichever is selected, apply to this work.

715.3.06 Quality Acceptance

General Provisions 101 through 150.

715.3.07 Contractor Warranty and Maintenance

Maintain treated areas to the Engineer's satisfaction until Final Acceptance of the Project.

715.4 Measurement

The quantity of bituminous treated roving to be paid for is measured in the number of surface square yards (meters), complete and accepted. The quantity of materials substituted for bituminous treated roving as allowed by Subsection 715.3.C will be measured according to the applicable portions of Section 710, Section 712, Section 713, or Section 714.

715.4.01 Limits

Treated slopes and waterways are measured separately.

715.5 Payment

This Work will be paid for at the Contract Price per square yard (meter) for bituminous treated roving of the type specified, complete in place and accepted. Materials substituted for bituminous treated roving will be paid for under Item No. 715—Bituminous Treated Roving (waterways), per square yard (meter) complete, in place and accepted.

Payment will be made under:

Item No. 715	Bituminous treated roving (slopes)	Per square yard (meter)
Item No. 715	Bituminous treated roving (waterways)	Per square yard (meter)

715.5.01 Adjustments

General Provisions 101 through 150.

Section 716—Erosion Control Mats (Slopes)

716.1 General Description

This work includes furnishing and placing erosion control mats (blankets) made of fiberglass, excelsior, jute mesh, bituminous treated roving, and straw, synthetic, or coconut over grass areas prepared according to Section 700 for permanent grass. Place according to the Plans or as directed by the Engineer. This specification is not applicable for waterways.

716.1.01 Definitions

General Provisions 101 through 150.

716.1.02 Related References

A. Standard Specifications

Section 712—Fiberglass Blanket

Section 713—Organic and Synthetic Material Fiber Blanket

Section 714—Jute Mesh Erosion Control

Section 715—Bituminous Treated Roving

B. Referenced Documents

General Provisions 101 through 150.

716.1.03 Submittals

General Provisions 101 through 150.

716.2 Materials

General Provisions 101 through 150.

716.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

716.3 Construction Requirements

716.3.01 Personnel

General Provisions 101 through 150.

716.3.02 Equipment

General Provisions 101 through 150.

716.3.03 Preparation

General Provisions 101 through 150.

716.3.04 Fabrication

General Provisions 101 through 150.

716.3.05 Construction

The contractor may elect to use either Section 712 – Fiberglass Blanket, Section 713 – Organic and Synthetic Material Fiber Blanket (except do not use Type II Wood Fiber Blanket), Section 714 – Jute Mesh Erosion Control, or Section 715 –